



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/658,571

09/09/2003

Hitoshi Tamashiro

075834.00439

3415

33448

7590

08/02/2005

ROBERT J. DEPKE

LEWIS T. STEADMAN

TREXLER, BUSHNELL, GLANGLORGI, BLACKSTONE & MARR

105 WEST ADAMS STREET, SUITE 3600

CHICAGO, IL 60603-6299

EXAMINER

CANNING, ANTHONY J

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 08/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/658,571

Applicant(s)

TAMASHIRO ET AL.

Examiner

Anthony J. Canning

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/7/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Acknowledgement of Amendment

1. An amendment was received and entered on 5 May 2005. The examiner acknowledges amendments to claims 1-8, and newly added claims 9 and 10.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yakio et al. (JP 05-182759) in view of Taniguchi et al. (U.S. 5,239,228).

Art Unit: 2879

4. As to claim 1, Yakio et al. disclose a display apparatus comprising: a panel substrate provided with light emitting devices (see Fig. 4, items 1 and 4; paragraph 0011) and driving electrodes for driving said light emitting devices (see Fig. 4, items 2 and 5; paragraph 0011), said light emitting devices and said driving electrodes forming a light emitting region and an electrode region (see Fig. 4, items 1, 2, 4 and 5; and corresponding description); and a sealing substrate adhered to said panel substrate through a sealing resin (see Fig. 4, items 13 and 14; paragraph 0034), such that there is substantially no void between the panel substrate and the sealing substrate in the light-emitting region of the device. Yakio et al. fail to disclose that the sealing substrate is provided with a relief portion for said sealing resin at its portion opposed to the outside of said light emitting region in the condition of being adhered to said panel substrate.

Taniguchi et al. disclose that the sealing substrate is provided with a relief portion for said sealing resin at its portion opposed to the outside of said light emitting region in the condition of being adhered to said panel substrate (see Fig. 8, item 53; column 7, lines 26-28). Taniguchi et al. further disclose that the relief portion serves as a reservoir for extra, squeezed out adhesive (column 7, lines 28-29).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the display apparatus of Yakio et al, to include a relief portion on the outside of the light emitting region, as taught by Taniguchi et al., for the added benefit of having a reservoir for extra, squeezed out adhesive.

5. As to claim 2, Yakio et al. And Taniguchi et al. disclose a display apparatus as set forth in claim 1. Taniguchi et al. further disclose relief portion is comprised of one or more grooves

Art Unit: 2879

(see Fig. 8, item 53; column 7, lines 26-28). Taniguchi et al. further disclose that the relief portion serves as a reservoir for extra, squeezed out adhesive (column 7, lines 28-29).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the display apparatus of Yakio et al, to include a relief portion on the outside of the light emitting region, as taught by Taniguchi et al., for the added benefit of having a reservoir for extra, squeezed out adhesive.

6. As to claim 3, Yakio et al. and Taniguchi et al. disclose a display apparatus as set forth in claim 1, wherein said relief portion is comprised of a plurality of holes. The relief portion is comprised of a through hole (see Fig. 8, item 54) and a groove (see Fig. 8, item 53). These constitute a plurality of holes. Taniguchi et al. further disclose that the groove is used as a collection region for excess squeezed resin, and the through hole is used for the outlet of gases and for the inlet of a material (column 7, lines 34-36).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the display apparatus of Yakio et al, to include a plurality of holes in the relief portion, as taught by Taniguchi et al., for the added benefit of the collection of excess resin and to outlet gas.

7. As to claim 4, Yakio et al. and Taniguchi et al. disclose a display apparatus as set forth in claim 1. Taniguchi et al. disclose that the relief portion for said sealing resin is comprised of a rough surface (see Fig. 8, item 55; column 7, lines 38-40). Taniguchi et al. further disclose that the roughening agent is a moisture absorbing agent to further improve the moisture-resistance of the display device (column 7, lines 40-41). Moisture absorption agents must have an affinity for water molecules, and a surface area to absorb water molecules. Therefore, whether the

Art Unit: 2879

absorption agent is a powder or a gel the surface will be roughened so as to absorb as much water as possible.

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the display apparatus of Yakio et al, to include a rough surface in the relief portion, as taught by Taniguchi et al., for the added benefit of improving the device's moisture-resistance.

8. As to claim 5, Yakio et al. discloses a method of manufacturing a display apparatus comprising a panel substrate provided with light emitting devices (see Fig. 4, items 1 and 4; paragraph 0011) and driving electrodes for driving said light emitting devices (see Fig. 4, items 2 and 5; paragraph 0011), said light emitting devices and said driving electrodes forming a light emitting region and an electrode region (see Fig. 4, items 1, 2, 4 and 5; and corresponding description), and a sealing substrate adhered to said panel substrate through a sealing resin (see Fig. 4, items 13 and 14; paragraph 0034). Yakio et al. fail to disclose providing said sealing substrate with a relief portion for said sealing resin at that portion of said sealing substrate which is opposed to the outside of said light emitting region in the condition where said sealing substrate is adhered to said panel substrate.

Taniguchi et al. disclose that the method provides said sealing substrate with a relief portion for said sealing resin at that portion of said sealing substrate which is opposed to the outside of said light emitting region in the condition where said sealing substrate is adhered to said panel substrate (see Fig. 8, item 53; column 7, lines 26-28). Taniguchi et al. further disclose that the relief portion serves as a reservoir for extra, squeezed out adhesive (column 7, lines 28-29).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the method of making a display apparatus of Yakio et al, to include a relief portion on the outside of the light emitting region, as taught by Taniguchi et al., for the added benefit of having a reservoir for extra, squeezed out adhesive.

9. As to claim 6, Yakio et al. and Taniguchi et al. disclose a method of manufacturing a display apparatus as set forth in claim 5. Taniguchi et al. further disclose that the relief portion for said sealing resin is comprised of one or more grooves (see Fig. 8, item 53; column 7, lines 26-28). Taniguchi et al. further disclose that the relief portion serves as a reservoir for extra, squeezed out adhesive (column 7, lines 28-29).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the display apparatus of Yakio et al, to include a relief portion on the outside of the light emitting region, as taught by Taniguchi et al., for the added benefit of having a reservoir for extra, squeezed out adhesive.

10. As to claim 7, Yakio et al. and Taniguchi et al. disclose a method of manufacturing a display apparatus as set forth in claim 5. The relief portion is comprised of a through hole (see Fig. 8, item 54) and a groove (see Fig. 8, item 53). These constitute a plurality of holes. Taniguchi et al. further disclose that the groove is used as a collection region for excess squeezed resin, and the through hole is used for the outlet of gases and for the inlet of a material (column 7, lines 34-36).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the display apparatus of Yakio et al, to include a plurality of

Art Unit: 2879

holes in the relief portion, as taught by Taniguchi et al., for the added benefit of the collection of excess resin and to outlet gas.

11. As to claim 8, Yakio et al. and Taniguchi et al. disclose a method of manufacturing a display apparatus as set forth in claim 5. Taniguchi et al. disclose that the relief portion for said sealing resin is comprised of a rough surface (see Fig. 8, item 55; column 7, lines 38-40).

Taniguchi et al. further disclose that the roughening agent is a moisture absorbing agent to further improve the moisture-resistance of the display device (column 7, lines 40-41). Moisture absorption agents must have an affinity for water molecules, and a surface area to absorb water molecules. Therefore, whether the absorption agent is a powder or a gel the surface will be roughened so as to absorb as much water as possible.

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the display apparatus of Yakio et al, to include a rough surface in the relief portion, as taught by Taniguchi et al., for the added benefit of improving the device's moisture-resistance.

12. As to claim 9, Yakio et al. and Taniguchi et al. disclose a display apparatus as set forth in claims 2 or 3. Taniguchi et al. further disclose that the relief portion is formed in a first surface of the sealing substrate of such that the relief portion does not reach the opposing second surface of the sealing substrate (see Fig. 8, item 53; column 7, lines 26-28). The groove is formed on the inner surface of the sealing substrate and does not reach all the way through to the exterior surface of the sealing substrate. Taniguchi et al. further disclose that the relief portion serves as a reservoir for extra, squeezed out adhesive (column 7, lines 28-29).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the display apparatus of Yakio et al, to include a relief portion on the outside of the light emitting region, as taught by Taniguchi et al., for the added benefit of having a reservoir for extra, squeezed out adhesive.

13. As to claim 10, Yakio et al. and Taniguchi et al. disclose a method of manufacturing a display apparatus as set forth in claims 6 or 7. Taniguchi et al. further disclose that the relief portion is formed in a first surface of the sealing substrate of such that the relief portion does not reach the opposing second surface of the sealing substrate (see Fig. 8, item 53; column 7, lines 26-28). The groove is formed on the inner surface of the sealing substrate and does not reach all the way through to the exterior surface of the sealing substrate. Taniguchi et al. further disclose that the relief portion serves as a reservoir for extra, squeezed out adhesive (column 7, lines 28-29).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the display apparatus of Yakio et al, to include a relief portion on the outside of the light emitting region, as taught by Taniguchi et al., for the added benefit of having a reservoir for extra, squeezed out adhesive.

Response to Arguments

14. The examiner acknowledges that Taniguchi does not teach resin being applied above the display region. Taniguchi does teach that an insulating oil is applied above the display region (see Fig. 8, item 50). The groove (53) is provided to catch excess oil that is squeezed. The groove achieves the instant application's goal of collection of excess material that is provided

Art Unit: 2879

over the display region. In view of the amendments to the claims, combining Taniguchi with Yakio over comes the amended claims, as well as the newly added claims.

Final Rejection

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Prior Art

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Park et al. (U.S. 6,784,612) teaches a display panel with grooves.

Art Unit: 2879

Contact Information

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony J. Canning whose telephone number is (571)-272-2486. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh D. Patel can be reached on (571)-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anthony Canning 

22 July 2005



KARABI GUHARAY
PRIMARY EXAMINER